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Nota di contenuto	A category of synchrotron X-ray imaging methods -- Practical basics and applications of X-ray tomography -- Advanced transmission X-ray microscopy for energy materials and devices -- Principles of transmission X-ray microscopy and its applications in battery study -- Coherent diffractive imaging and its application in energy materials and devices study -- Synchrotron radiation based X-ray fluorescence imaging -- Applications of soft X-ray spectromicroscopy in energy research from materials to batteries -- Principles and applications of industrial X-ray computed tomography -- Machine learning in X-ray imaging and microscopy applications -- In situ/operando synchrotron X-ray imaging techniques for energy-related applications.
Sommario/riassunto	This book comprehensively outlines synchrotron-based X-ray imaging technologies and their associated applications in gaining fundamental insights into the physical and chemical properties as well as reaction mechanisms of energy materials. In this book the major X-ray imaging technologies utilised, depending on research goals and sample specifications, are discussed. With X-ray imaging techniques, the

morphology, phase, lattice and strain information of energy materials in both 2D and 3D can be obtained in an intuitive way. In addition, due to the high penetration of X-rays, operando/in situ experiments can be designed to track the qualitative and quantitative changes of the samples during operation. This book will broader the reader’s view on X-ray imaging techniques and inspire new ideas and possibilities in energy materials research.